

Trigonometry

Summer Math Packet

Completion of the summer math packet is a GAC requirement and will serve as preparation for the fall semester. You must show all the work and steps for solving the problems.

This Packet is designed to be completed over time and in small chunks.

Due Date: August 5, 2024

Name: _____

Due the first day of school

Date _____ Period _____

Simplify each expression.

1) $-2b - 2b$

2) $-3p - 6p$

3) $5(3v - 8) - 10v$

4) $-10n + 5(8n + 3)$

5) $-2(5 + 5v) - 8(5v + 4)$

6) $-2(k + 5) + 8(-6 + 5k)$

7) $b + \frac{3}{2}b$

8) $\frac{1}{3} + 2\left(-\frac{3}{10}n + 1\right)$

9) $(8m + 8)(7m + 3)$

10) $(7 + 7x)^2$

Solve each equation.

11) $10 = -5x - 5x$

12) $-4 - 3x + 2x = -2$

13) $7(-7 + 2x) = 2x - 1$

14) $5(5 - 7n) = -6 - 4n$

15) $-78 = -5(1 - 8n) - (5n + 3)$

16) $42 = -6(1 + n) - 4(n + 8)$

17) $\frac{7}{6}n + \frac{4}{3}n = \frac{15}{4}$

18) $-2m + 2m = 0$

19) $7.3 + 5.4(1 + 3.5k) = 143.11$

20) $86.35 = -5.5(a - 7.9)$

Factor each completely.

21) $x^4 - 2x^2$

22) $a^4 + 4a^2$

23) $k^2 - k - 30$

24) $a^2 - 13a + 36$

25) $u^2 - 25v^2$

26) $9b^2 - 4a^2$

27) $12b^3 + 15b^2 + 8b + 10$

28) $3x^3 + 5x^2 + 6x + 10$

29) $27n^4 - 81n^3 + 24n^2$

30) $36p^3 - 4p^2 - 32p$

Evaluate each function.

31) $f(n) = 2n - 2$; Find $f(-10)$

32) $h(n) = -n - 5$; Find $h(-3)$

33) $k(x) = -3x^2 - x$; Find $k(8)$

34) $g(x) = x^3 + 4x$; Find $g(-2)$

35) $g(x) = -2|3x - 3| - 2$; Find $g(-1)$

36) $g(x) = |x| + 3$; Find $g(-10)$

37) $f(n) = n^3 + 2$; Find $f\left(-\frac{1}{2}\right)$

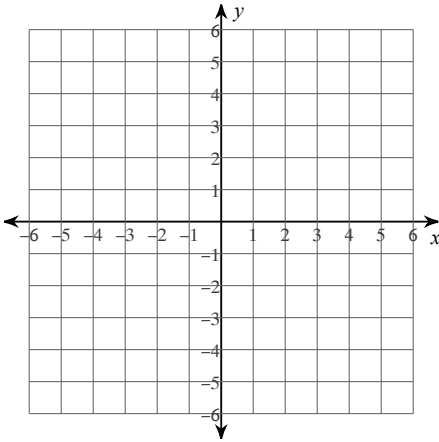
38) $g(x) = x^2 + \frac{1}{4}$; Find $g(0)$

39) $h(t) = 2t - 3$; Find $h(t + 1)$

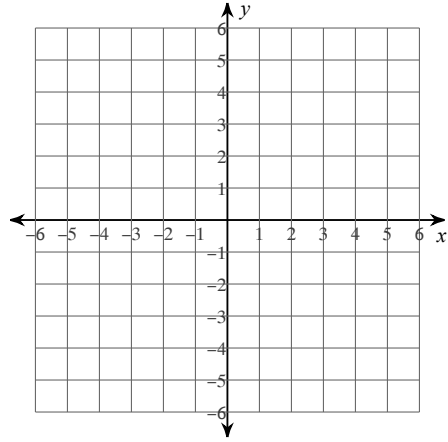
40) $h(t) = 2t - 3$; Find $h(4t)$

Graph each equation.

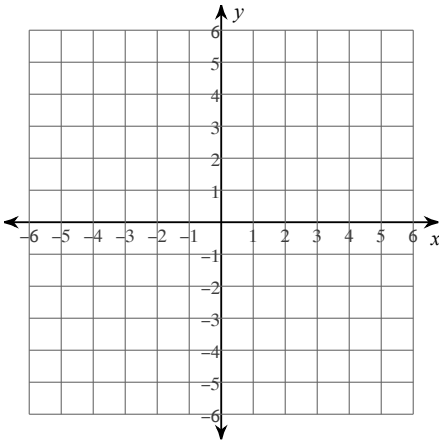
41) $y = \frac{1}{4}x + 2$



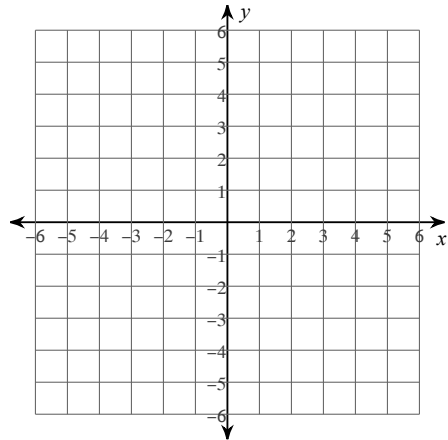
42) $3x + y = 1$



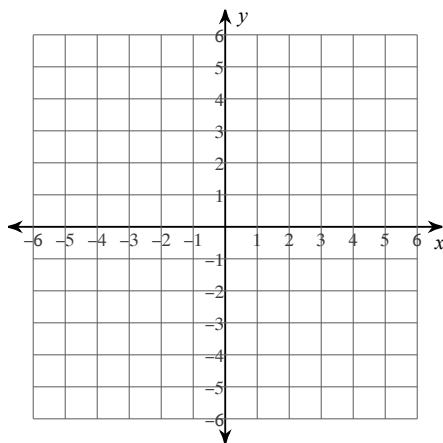
43) $3y = 3x + 3$



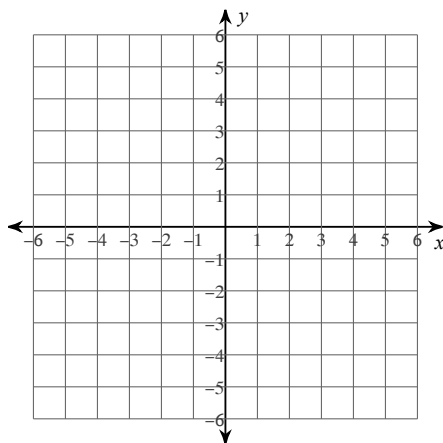
44) $2 - 2y = 12x$



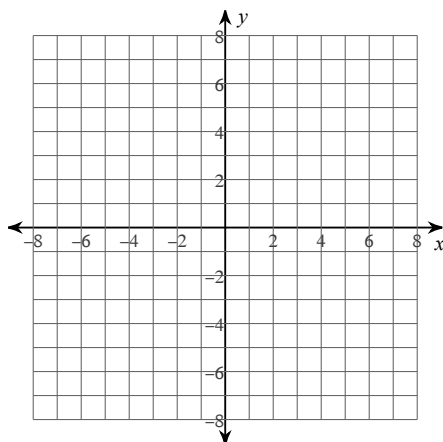
$$45) y = 2|x - 2| - 1$$



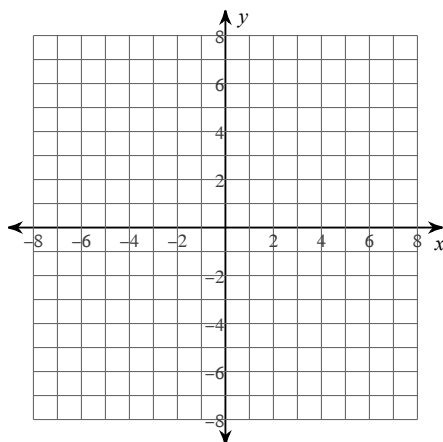
$$46) y = -2|x + 2| - 3$$



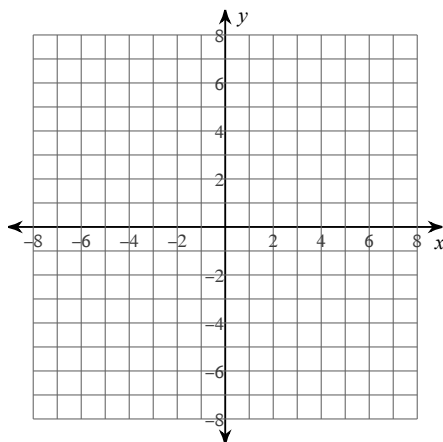
$$47) y = -(x - 2)^2 - 4$$



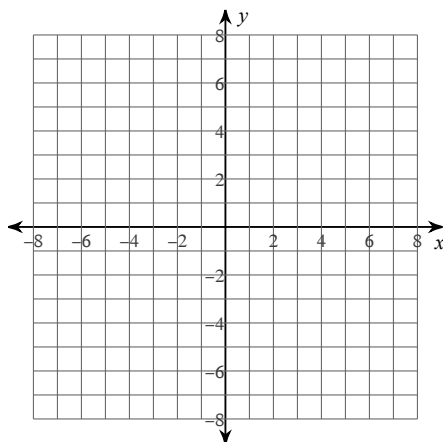
$$48) y = (x + 6)^2 + 2$$



$$49) y = -4\sqrt{x - 2} + 1$$

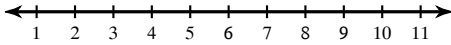


$$50) y = 2\sqrt{x - 2} - 1$$

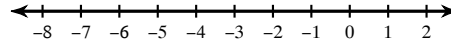


Solve each inequality and graph its solution.

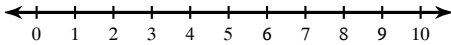
51) $b - 3 + 5b > 15$



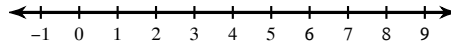
52) $-6 \geq -2 + 2r + 2r$



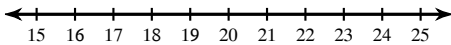
53) $-35 - 5p \geq -3(5p - 7) + 4$



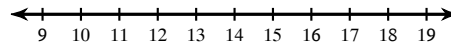
54) $8p - 14 \geq -6(8p - 7)$



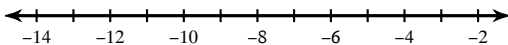
55) $-8(k - 8) \leq -2k - 4(k - 5)$



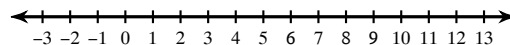
56) $-5(x - 3) + 2x \leq -4(x - 7)$



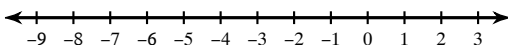
57) $-14 < x - 5 \leq -10$



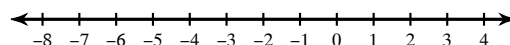
58) $\frac{n}{8} \leq 0$ or $n - 4 \geq 4$



59) $|3 + 10p| + 2 \leq 5$



60) $7|7 + 5m| + 5 > 54$



Write the slope-intercept form $y = mx + b$ of the equation given the following information.

61) through: (3, 2) and (0, 0)

62) through: (-2, -4) and (-2, 1)

63) Slope = $-\frac{3}{5}$, y-intercept = 2

64) Slope = -2, y-intercept = 3

65) through: (-1, -4), slope = -1

66) through: (-5, -1), slope = $-\frac{3}{5}$

67) through: (1, 5), parallel to $y = 9x - 3$

68) through: (-1, 0), parallel to $y = 2x + 4$

69) through: (-2, 1), perp. to $y = \frac{5}{3}x + 2$

70) through: (-2, 2), perp. to $y = 2x - 4$

Simplify.

71) $-2\sqrt{6} - 3\sqrt{6}$

72) $4\sqrt{6} - 5\sqrt{6}$

73) $-\sqrt{2} + 3\sqrt{12} - \sqrt{2}$

74) $-3\sqrt{6} + 3\sqrt{5} + 2\sqrt{5}$

75) $\sqrt{6}(4 + \sqrt{6})$

76) $5\sqrt{15}(-5\sqrt{5} + \sqrt{2})$

77) $(\sqrt{2} + 4\sqrt{3})(5\sqrt{2} + \sqrt{3})$

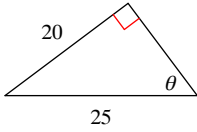
78) $(3\sqrt{3} + \sqrt{2})(4\sqrt{3} - 4\sqrt{2})$

79) $\frac{5}{5 + \sqrt{3}}$

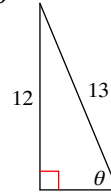
80) $\frac{4\sqrt{2}}{2\sqrt{5} - 5\sqrt{2}}$

Find the value of the trig function indicated.

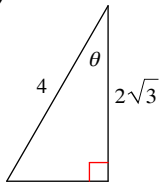
81) $\sin \theta$



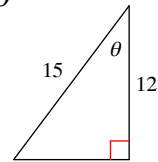
82) $\cot \theta$



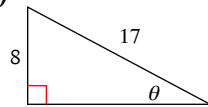
83) $\cot \theta$



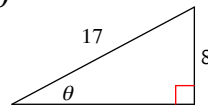
84) $\csc \theta$



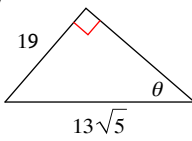
85) $\cos \theta$



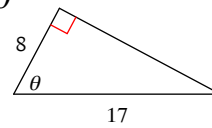
86) $\tan \theta$



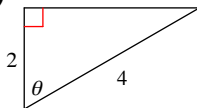
87) $\sin \theta$



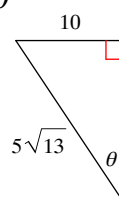
88) $\sec \theta$



89) $\tan \theta$

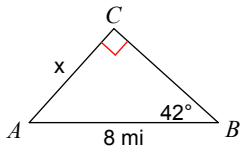


90) $\cot \theta$

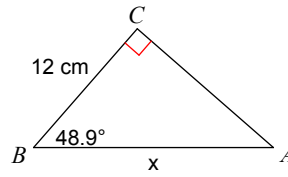


Find the measure of each side or angle indicated. Round to the nearest tenth.

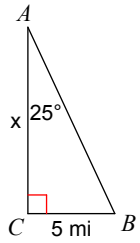
91)



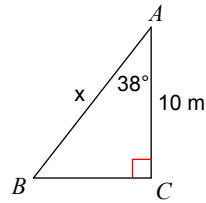
92)



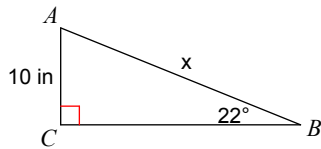
93)



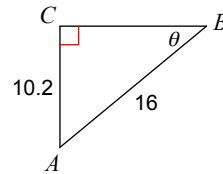
94)



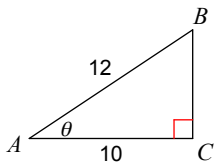
95)



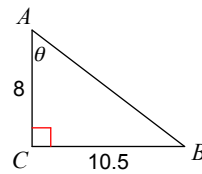
96)



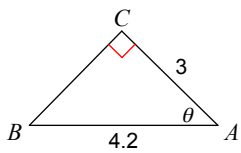
97)



98)



99)



100)

